

**UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA**

CHAO TAI ELECTRONICS CO., LTD,
a Taiwanese corporation,

Plaintiff,

v.

LEDUP ENTERPRISE, INC., a
California corporation; LOWE'S HIW,
INC., a Washington Corporation; THE
HOME DEPOT U.S.A., INC., a
Delaware corporation; MARTHA
STEWART LIVING OMNIMEDIA,
INC., a Delaware corporation; and DOES
1 through 10, inclusive,

Defendants.

CASE NO.: CV12-10137 R-MRW

**STATEMENT OF
UNCONTROVERTED FACTS AND
CONCLUSIONS OF LAW IN
SUPPORT OF GRANT OF
SUMMARY JUDGMENT OF
INVALIDITY OF U.S. PATENT NO.
7,301,287**

Hon. Manuel L. Real

[Action filed: November 28, 2012]

1 **STATEMENT OF FACTS AND CONCLUSIONS OF LAW**

2 Defendant Lowe's HIW, Inc., now known as "Lowe's Home Centers, LLC"
3 ("Lowe's"), filed its Motion for Summary Judgment of Invalidity of U.S. Patent No.
4 7,301,287 ("the '287 patent" or the "Patent-at-Issue") on January 6, 2014 ("Motion").
5 Defendant LedUp Enterprise, Inc. ("LedUp") subsequently joined Lowe's Motion.
6 On February 3, 2014, the Court found asserted claims 1-5, 7, and 8 of the '287 patent
7 to be invalid under 35 U.S.C. § 102(b), and granted Lowe's Motion for Summary
8 Judgment of Invalidity.

9 The Findings of Fact Not Genuinely Disputed and Conclusions of Law are set
10 forth below.

11 **I. THE PARTIES**

12 1. Defendant Lowe's is a North Carolina corporation with a principal place
13 of business in North Carolina.

14 2. Defendant LedUp is a California corporation with a principal place of
15 business in California.

16 3. Plaintiff Chao Tai Electronics Co., Ltd. ("Chao Tai") is a Taiwan
17 corporation with a principal place of business in Taipei, Taiwan, Republic of China.
18 Chao Tai purports to be the Assignee of the '287 patent.

19 **II. THE HISTORY OF THE CASE**

20 4. On November 28, 2012, Chao Tai filed its Original Complaint of Patent
21 Infringement against Lowe's, LedUp, Home Depot U.S.A., Inc., Martha Stewart
22 Living Omnimedia, Inc., and Does 1 through 10 inclusive (Dkt. No. 1).

23 5. On February 19, 2013, Chao Tai filed its First Amended Complaint
24 against Lowe's, LedUp, Home Depot U.S.A., Inc., Martha Stewart Living
25 Omnimedia, Inc., and Does 1 through 10 inclusive (Dkt. No. 8).

26 6. On April 12, 2013, LedUp filed its answer, affirmative defenses, and
27 counterclaims (Dkt. Nos. 25 and 35), and Lowe's filed its answer, affirmative
28 defenses, and counterclaims (Dkt. No. 34).

1 7. On May 2, 2013, Chao Tai filed its Answer to Lowe's counterclaims
2 (Dkt. No. 41) and LedUp's counterclaims (Dkt. No. 44).

3 8. On January 6, 2014, Lowe's and LedUp each filed a Motion for
4 Summary Judgment of Invalidity (Dkt. Nos. 57 and 58). LedUp joined Lowe's
5 Motion on January 7, 2014 (Dkt. No. 62).

6 9. Dr. E. Fred Schubert, Professor of Electrical Engineering at Rensselaer
7 Polytechnic Institute, provided a Declaration in support of Lowe's Motion for
8 Summary Judgment (Dkt. No. 57-4).

9 10. Dr. Schubert's role as an expert was disclosed in accordance with Federal
10 Rule of Civil Procedure 26(a), and his expert report was served on December 3, 2013,
11 in accordance with Federal Rule of Civil Procedure 26(a)(2)(C).

12 11. Dr. Schubert is qualified to offer expert opinion and testimony in this
13 matter, and Chao Tai made no challenge to his qualifications.

14 12. On January 13, 2014, Chao Tai filed its Opposition to Lowe's Motion
15 (Dkt. No. 64), and attached an Affidavit of its corporate representative, Mr. Cheng
16 Sheng Yang (Dkt. No. 64-2).

17 13. Chao Tai failed to provide an expert declaration in opposition to Lowe's
18 Motion.

19 14. Pursuant to Local Rule 56-2, Chao Tai was obligated to file a
20 "Statement of Genuine Disputes" setting forth all material facts as to which it is
21 contended there exists a genuine dispute necessary to be litigated." C.D. Cal. L.R. 56-
22 2. According to Local Rule 56-3, the material disputed facts must be both: (a)
23 included in the "Statement of Genuine Disputes" and (b) controverted by declaration
24 or other written evidence filed in opposition to the motion. C.D. Cal. L.R. 56-3.

25 15. While Chao Tai generally stated that it disputed many of the facts, it cited
26 no declaration or written report in doing so. *See* Pl. SDF (Dkt. No. 64-1).

27 16. Chao Tai failed to file an Opposition to the separate Motion for Summary
28 Judgment filed by LedUp.

1 17. On January 16, 2014, Lowe's and LedUp each filed a Reply to Chao
2 Tai's Opposition to Lowe's Motion (Dkt. Nos. 69 and 70).

3 18. A hearing was held before this Court on February 3, 2014, whereupon the
4 Court granted Lowe's Motion for Summary Judgment of invalidity of the '287 patent.

5 **III. THE '287 PATENT**

6 **A. The '287 Patent Specification**

7 19. The '287 patent issued from U.S. Patent Application No. 11/624,233,
8 filed on January 18, 2007. The '287 patent "relates to a high power light string device
9 and, more particularly, to a light string device composed of LEDs." '287 patent,
10 Abstract. According to the '287 patent, one objective of the described techniques "is
11 to provide a high power light string device that two power adaptors are respectively
12 disposed in a plug and a tail receptacle to simplify the whole light string device so as
13 to enhance the decorating effect and prevent from destroying the delicacy of the whole
14 light string device." *Id.* at 1:37-42. Another objective of the described techniques "is
15 to provide a high power light string device, which makes use of a plurality of LEDs to
16 form a light string structure with high efficiency and power saving." *Id.* at 1:43-46.
17 The '287 patent provides that these objectives are achieved through a "high power
18 light string device 20 [that] comprises a plug 22, a tail receptacle 26, and an LED
19 string 28." *Id.* at 2:9-11.

20 20. Referring to FIG. 3, which illustrates "an internal structure diagram of
21 the present invention," the '287 patent explains that "a power adapter 32 [is] disposed
22 in the plug 22" and that "[t]he power adapter 32 converts an AC voltage through the
23 plug blade set 24 to a high DC voltage." *Id.* at 2:21-27. The '287 patent further
24 provides that "[a]nother power adaptor 34 . . . [is] disposed in the tail receptacle 26."
25 *Id.* at 2:2-3 and 27-28. "The plug 22 and the tail receptacle 26 are driven by the same
26 voltage such as 110 V or 220 V." *Id.* at 2:15-17. "The power adapter 34 receives the
27 AC voltage, such as 110 V or 220 V, through the plug blade set 24 via the electric
28 wires 251 and 252 to convert this AC voltage to a low DC voltage." *Id.* at 2:29-32.

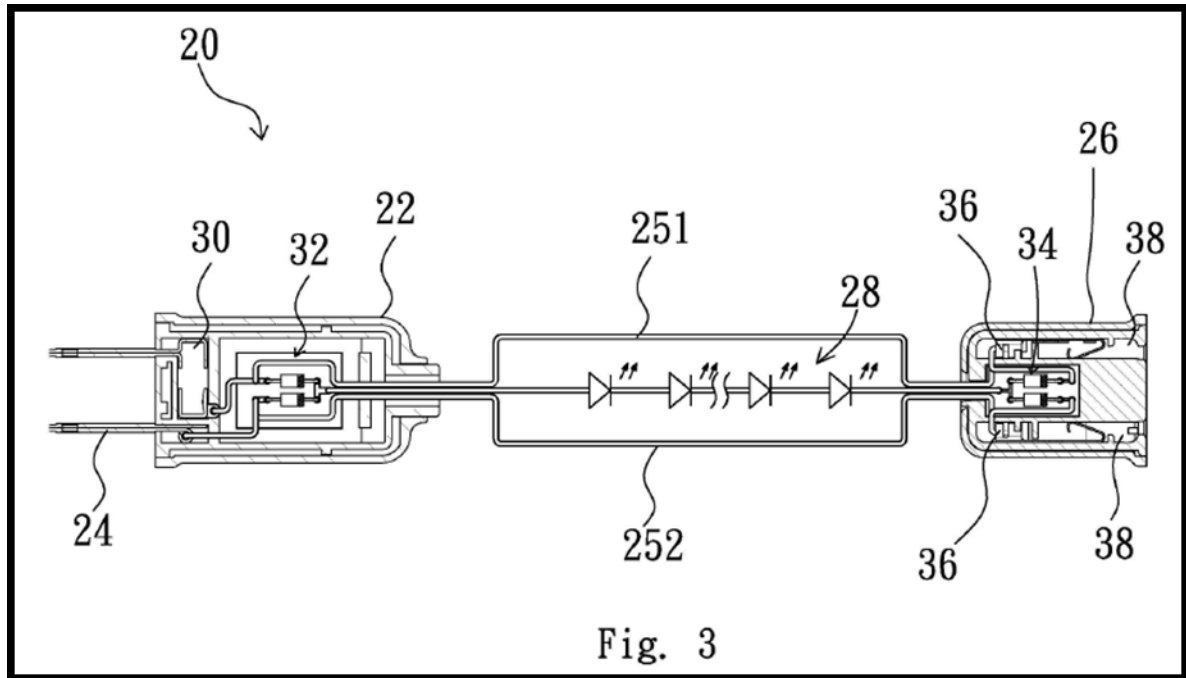


FIG. 3 of the '287 Patent

21. To achieve its stated objective, the '287 patent describes and claims a full-wave split-bridge rectifier. *See* Schubert Decl. at ¶¶ 26 and 42; *see also* '287 patent, FIG. 3. As shown in FIG. 3 of the '287 patent, the full-wave split-bridge rectifier comprises: a first pair of rectifying diodes in the plug 22, which the '287 patent refers to as “power adaptor 32,” and a second pair of rectifying diodes in the tail receptacle, which the '287 patent refers to as “power adaptor 34.” *See* Schubert Decl. at ¶¶ 26 and 42; *see also* '287 patent, FIG. 3.

22. FIG. 3 of the '287 patent illustrates the first pair of rectifying diodes and the second pair of rectifying diodes using standard rectangular representations having cathode marks. The cathode marks on the two pairs of rectifying diodes provide an indication of the current flow, as well as the relative (*i.e.*, high and low) voltage, between the plug and the tail receptacle. *See* Schubert Decl. at ¶¶ 25, 26, and 42.

23. As illustrated in FIG. 3, the '287 patent shows the first pair of rectifying diodes contained in the plug are electrically connected to the light string through the

1 cathode, and the second pair of rectifying diodes contained in the tail receptacle are
2 electrically connected to the light string through the anode. *See id.* at ¶ 43.

3 24. The full-wave split-bridge rectifier disclosed in the '287 patent converts
4 an input alternating current (AC) voltage to an output direct current (DC) voltage that
5 is supplied to the LED light string 28 through the two pairs of rectifying diodes (*i.e.*,
6 power adaptors 32 and 34). *See id.* at ¶ 44. Power adaptor 32 (*i.e.*, the first pair of
7 rectifying diodes) converts an input AC voltage to an output DC voltage having a
8 positive polarity, and power adaptor 34 (*i.e.*, the second pair of rectifying diodes)
9 converts an input AC voltage to an output DC voltage having a negative polarity. *See*
10 *id.*

11 25. In the '287 patent, the current flows from the plug through the LEDs to
12 the tail receptacle. *See id.* Thus, the power adaptor 32 of the plug has a relatively
13 higher DC voltage, whereas the power adaptor 34 of the tail receptacle has a relatively
14 lower DC voltage. *See id.*

15 26. Therefore, for the "LED string" of the '287 patent "to be turned on to
16 emit light," as described and claimed, the '287 patent requires both power adaptor 32
17 and power adaptor 34 to operate cooperatively. *See id.*

18 **B. Prosecution Of The '287 Patent**

19 27. During its initial prosecution before the United States Patent and
20 Trademark Office ("USPTO"), the '287 patent was issued without any rejections.

21 28. On June 27, 2011, however, a third-party requestor (TPR) submitted an
22 *ex parte* request for the USPTO to reexamine the '287 patent.

23 29. The USPTO granted the *ex parte* reexamination request on August 4,
24 2011, and mailed an Office Action on December 14, 2011, rejecting all of claims 1-8
25 of the '287 patent. The December 14, 2011 Office Action incorporated the claim
26 charts submitted by the TPR for the details of the claim rejections. In sum, the
27 December 14, 2011 Office Action rejected claims 1-8 of the '287 patent under
28 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 7,377,802 to Allen ("Allen

1 '802"); rejected claims 1-5, 7, and 8 of the '287 patent under 35 U.S.C. § 102(b) as
 2 being anticipated by U.S. Patent No. 6,972,528 to Shao ("Shao"); and rejected claim 6
 3 of the '287 patent under 35 U.S.C. § 103(a) as being obvious over Shao and Allen
 4 '802.

5 30. On February 6, 2012, Chao Tai filed a Reply to the December 14, 2011
 6 Office Action and made various arguments as why the Shao patent did not anticipate
 7 the '287 patent.

8 31. The USPTO relied on the arguments made by Chao Tai and, on April 18,
 9 2012, issued a Notice of Intent to Issue *Ex Parte* Reexamination Certificate
 10 ("Notice").

11 **C. Asserted Claims**

12 32. In this action, Chao Tai asserted independent claim 1 and dependent
 13 claims 2-5, 7, and 8 of the '287 patent.

14 33. Independent claim 1 recites the following:

15 1. A high power light string device comprising:

16 a plug having a first plug blade set and a first power adaptor,
 17 wherein said first power adaptor is disposed in said plug to
 18 convert an AC voltage through said first plug blade set to a
 19 high DC voltage;

20 a tail receptacle having a conducting strip set and a second
 21 power adaptor converting said AC voltage through said first
 22 plug blade set to a low DC voltage; and

23 at least an LED string having a first end and a second end,
 24 said first end being connected to said first power adaptor to
 25 receive said high DC voltage and said second end being
 26 connected to said second power adaptor to receive said low
 27 DC voltage so that said LED string is turned on to emit light.

28 34. Dependent claim 2 recites the following:

2. The high power light string device as claimed in claim
 1 wherein said conducting-strip set is electrically plugged by
 a second plug blade set of a second plug.

35. Dependent claim 3 recites the following:

1 3. The high power light string device as claimed in claim
2 1, wherein said conducting-strip set is electrically connected
3 to said second power adaptor.

4 36. Dependent claim 4 recites the following:

5 4. The high power light string device as claimed in claim
6 1, wherein said conducting-strip set is electrically connected
7 to said first plug blade set.

8 37. Dependent claim 5 recites the following:

9 5. The high power light string device as claimed in claim
10 1, wherein said plug and said tail receptacle are driven at the
11 same voltage.

12 38. Dependent claim 7 recites the following:

13 7. The high power light string device as claimed in claim
14 1, wherein said plug and said tail receptacle are made of
15 plastic material.

16 39. Dependent claim 8 recites the following:

17 8. The high power light string device as claimed in claim
18 1, wherein each LED of said LED string is selected among a
19 white LED, a red LED, a blue LED, a green LED, a yellow
20 LED, and a LED of another color.

21 **IV. LEGAL PRINCIPLES OF SUMMARY JUDGMENT**

22 40. Summary judgment “should be rendered” where “there is no genuine
23 issue as to any material fact” and “the movant is entitled to judgment as a matter of
24 law.” Fed. R. Civ. P. 56(c).

25 41. A factual issue is genuine if a reasonable jury could return a verdict for
26 the non-moving party. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986); *see*
27 *also Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986)
28 (“Where the record taken as a whole could not lead a rational trier of fact to find for
the non-moving party, there is ‘no genuine issue for trial.’”).

 42. The court “must ‘view the facts and draw reasonable inferences in the
light most favorable to the party opposing the [summary judgment] motion.’”
Wilkinson v. Torres, 610 F.3d 546, 550 (9th Cir. 2010); *see also Scott v. Harris*, 550
U.S. 372, 378 (2007) (holding that where the moving and nonmoving parties’ versions

1 of events differ, courts are required to view the facts and draw reasonable inferences
2 in the light most favorable to the nonmoving party).

3 43. The moving party bears the initial burden of establishing the absence of a
4 genuine issue of material fact. *Celotex Corp. v. Catrett*, 477 U.S. 317, 323-24 (1986).
5 Once the moving party has met its burden, the nonmoving party must go beyond the
6 pleadings and identify specific facts through admissible evidence that show a genuine
7 issue for trial. *Id.*; Fed. R. Civ. P. 56(c). “However, when the facts, as alleged by the
8 non-moving party, are unsupported by the record such that no reasonable jury could
9 believe them, [the court] need not rely on those facts for purposes of ruling on the
10 summary judgment motion.” *Wilkinson*, 610 F.3d at 550 (citing *Scott*, 550 U.S. at 280
11 (2007)).

12 44. Conclusory or speculative testimony in affidavits and moving papers is
13 insufficient to raise genuine issues of fact and defeat summary judgment. *Thornhill’s*
14 *Publ’g Co. v. GTE Corp.*, 594 F.2d 730, 738 (9th Cir. 1979). “A party cannot create a
15 genuine issue of material fact simply by making assertions in its legal papers.”
16 *Nguyen v. Radiant Pharm. Corp.*, 946 F. Supp. 2d 1025 (C.D. Cal. 2013) (citing *S.A.*
17 *Empresa De Viacao Aerea Rio Grandense v. Walter Kidde & Co., Inc.*, 690 F.2d
18 1235, 1238 (9th Cir. 1982)). “Rather, there must be specific, admissible evidence
19 identifying the basis for the dispute.” *Id.*

20 45. Self-serving declarations that contradict prior, sworn testimony may be
21 disregarded. “The general rule in the Ninth Circuit is that a party cannot create an
22 issue of fact by an affidavit contradicting his prior deposition testimony.” *Van Asdale*
23 *v. Int’l Game Tech.*, 577 F.3d 989, 998 (9th Cir. 2009) (quoting *Kennedy v. Allied*
24 *Mut. Ins. Co.*, 952 F.2d 262, 266 (9th Cir. 1991)). Known as the “sham affidavit”
25 rule, this rule is necessary to maintain the integrity of the summary judgment
26 procedure. *See id.* Sham testimony is “testimony that flatly contradicts earlier
27 testimony in an attempt to ‘create’ an issue of fact and avoid summary judgment.”
28 *Kennedy*, 952 F.2d at 266.

1 **V. LEGAL PRINCIPLES OF ANTICIPATION**

2 46. “Challenges to the validity of claims, whether regularly issued [or] issued
3 after a reexamination pursuant to 35 U.S.C. §§ 301-307 . . . must meet the clear and
4 convincing standard of persuasion.” *Superior Fireplace Co. v. Majestic Prods. Co.*,
5 270 F.3d 1358, 1367 (Fed. Cir. 2001) (citing *Kaufman Co. v. Lantech, Inc.*, 807 F.2d
6 970, 973-74 (Fed. Cir. 1986)). “Whether a reference was previously considered by
7 the PTO, the burden of proof is the same: clear and convincing evidence of invalidity
8 The burden does not suddenly change to something higher–‘extremely clear and
9 convincing evidence’ or ‘crystal clear and convincing evidence’—simply because the
10 prior art references were considered by the PTO.” *Sciele Pharma Inc. v. Lupin Ltd.*,
11 684 F.3d 1253, 1260 (Fed. Cir. 2012).

12 47. Prior art under § 102(b) includes subject matter that was “patented or
13 described in a printed publication in this or a foreign country . . . more than one year
14 prior to the date of the application for patent in the United States.” 35 U.S.C.
15 § 102(b).

16 48. A patent is anticipated if a single prior art reference discloses each and
17 every limitation of the claimed invention, either expressly or inherently. *Schering*,
18 339 F.3d at 1377 (Fed. Cir. 2003). “Under the principles of inherency, if the prior art
19 necessarily functions in accordance with, or includes, the claimed limitations, it
20 anticipates.” *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999).

21 49. Courts have an independent obligation to review the validity of patents,
22 and are not bound by the determination of an examiner. *See Fromson v. Advance*
23 *Offset Plate, Inc.*, 755 F.2d 1549, 1555 (Fed. Cir. 1985) (stating that a patent
24 examiner’s finding in an *ex parte* proceeding, although accorded deference in district
25 court litigation, is never binding on the court); *Pfizer v. Apotex, Inc.*, 480 F.3d 1348,
26 1359-60 (Fed. Cir. 2007); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1534
27 (Fed. Cir. 1983).

50. In performing its review, this Court has accorded the USPTO's determination the necessary deference, but based on the undisputed declaration of Dr. Schubert, the clear admissions of Chao Tai's corporate representative, and the full record before the Court, which was not available to the examiners at the USPTO, the Court concludes that no trier of fact could reasonably conclude that the Shao patent does not anticipate the claims of the '287 patent.

51. To the extent that Chao Tai's corporate representative attempted to recant his deposition testimony through a later-filed declaration served in opposition to Lowe's Motion, the Court finds that the deposition testimony was clear and constitutes a binding admission, and that the declaration amounts to inadmissible, sham testimony offered solely in an attempt to create a triable fact.

VI. THE ASSERTED CLAIMS ARE INVALID BECAUSE THEY ARE ANTICIPATED BY U.S. PATENT NO. 6,972,528 TO SHAO

52. U.S. Patent No. 6,972,528 to Chilliang Shao *et al.* ("Shao"), issued December 6, 2005, from an application filed April 29, 2004.

53. It is undisputed that Shao is prior art to the '287 patent because it issued more than one year before the filing date of the '287 patent. *See* 35 U.S.C. § 102(b).

54. Chao Tai has conceded that all elements of claims 1-5, 7, and 8 of the '278 patent are disclosed by Shao except Chao Tai argues that "Shao does not disclose a first plug blade set and a first power adaptor, wherein said first power adaptor is disposed in said plug to convert an AC voltage through said first plug blade set to a high DC voltage, or a tail receptacle having a conducting strip set and a second power adaptor converting said AC voltage through said first plug blade set to a low DC voltage." *See, e.g.*, Pl. SDF (Dkt. No. 64-1) at ¶¶ 47, 50, 53, 56, 59, 62, and 65.

55. As explained below, the Court finds that Shao discloses each and every limitation of claim 1 of the '287 patent, either expressly or inherently.

56. Shao shows and discloses a high powered light string device with a full-wave split-bridge rectifier having two pairs of rectifying diodes (*i.e.*, two power

adaptors) located in a front plug and a tail receptacle, respectively, for powering a set of LED lights. *See* Schubert Decl. at ¶¶ 56, 57, 60, 61, 66, 67, 71, 72, 77, 82, and 85.

57. Shao discloses “[a] **high power light string device**,” as recited in independent claim 1. Shao, which is related to “the field of decorative lighting,” discloses “an improved structure for an LED lighting chain.” Shao at 1:8-10 and 53-54. Shao generally discloses that “the present invention comprises a front plug 10, an AC/DC converter socket comprising four rectifying diodes 31, 32, 33, and 34, and at least one LED serial set 30,” that “can comprise a plurality of LEDs 40 connected serially.” *Id.* at 2:45-49. The input to Shao’s light string is disclosed as “110 VAC or 220 VAC,” which is “high power,” within the scope and meaning of the ’287 patent. *See, e.g., id.* at 2:56; *see also* Schubert Decl. at ¶ 57. Chao Tai concedes that Shao discloses this element. *See* Pl. SDF (Dkt. No. 64-1) at ¶ 35.

58. Shao discloses “**a plug having a first plug blade set and a first power adaptor**,” as recited in independent claim 1. Shao discloses “a front plug 10” that “can be a common household plug that is connected to a source voltage (110 VAC or 220 VAC).” *Id.* at 2:46 and 55-56. A common household plug inherently has a “plug blade set” that allows it to connect to a source voltage, within the scope and meaning of the ’287 patent. *See* Schubert Decl. at ¶ 60. Referring to FIG. 3, Shao further discloses that “the present invention comprises a front plug 10, an AC/DC converter socket comprising four rectifying diodes 31, 32, 33, and 34, and at least one LED serial set 30.” Shao at 3:45-48. According to Shao, “[t]he rectifying diodes 31, 32, 33, and 34 can be divided into two groups, with each group including two rectifying diodes.” *Id.* at 3:1-3. “In one embodiment [of Shao], the two rectifying diodes of the first group 31 and 32 may be combined with the front plug to form a package 70 and 72.” *Id.* at 3:8-10. The first pair of rectifying diodes 31 and 32 of Shao form a “first power adaptor,” within the scope and meaning of the ’287 patent. *See* Schubert Decl. at ¶ 61.

59. Chao Tai's corporate representative, Mr. Chen Sheng Yang, confirmed that the arrangement of the two rectifying diodes in the plug of Shao was equivalent to the first power adaptor of the '287 patent, and that the Shao power adaptor was capable of converting AC current to DC current. *See* Exh. I to Lowe's Reply (Yang Deposition Tr. (Dec. 10, 2013)) at 181:12-22 ("Q. Box A, that would be equivalent to the first power adapter in the 287 Patent? A. Correct.") (Dkt. No. 70-6); *see also* Exh. F to Lowe's Motion (Exhibit 13 to Yang Deposition (Dec. 10, 2013)) (Dkt. No. 57-3).

60. Shao discloses **"wherein said first power adaptor is disposed in said plug to convert an AC voltage through said first plug blade set to a high DC voltage,"** as recited in independent claim 1. As illustrated in FIG. 3 of Shao, the first power adaptor package 72 is disposed within the plug 10. *See* Schubert Decl. at ¶ 66. Referring to FIG. 3 of Shao, the layout of the two rectifying diodes 31 and 32 in the plug 72 shows that the polarity of the light string at the plug is negative. *See* Schubert Decl. at ¶ 67. This is further supported by the "negative" sign placed near the connection of the LED serial set 30 and the two rectifying diodes 31 and 32 in FIG. 3 of Shao. *See id.* Shao, however, also explains that "the connection method can be different from what is shown in FIG. 3 and FIG. 4." Shao at 3:20-21. According to Shao, "[t]he position of the rectifying diodes 31 and 32 of the first group can be changed to the position of those of the second group 33 and 34, and vice visa," and "if this is the case, the direction of the positive and negative ends of LEDs in the LED serial set should also be changed correspondingly." *Id.* at 3:22-26. In Shao's alternate configuration, the polarity of the LED light string at the plug would be positive. *See* Schubert Decl. at ¶ 67. Thus, in Shao's alternate configuration, the power adaptor at the plug would convert an input AC voltage to a high DC voltage, within the scope and meaning of the '287 patent. *See id.*

61. Chao Tai's corporate representative, Mr. Chen Sheng Yang, confirmed that the arrangement of the two rectifying diodes in the plug of Shao was equivalent to the first power adaptor of the '287 patent, and that the Shao power adaptor was

1 capable of converting AC current to DC current. *See* Exh. I to Lowe’s Reply (Yang
 2 Deposition Tr. (Dec. 10, 2013)) at 181:12-20 (Dkt. No. 70-6); *see id.* at 182:20-22
 3 (“Q. Box A, that would be equivalent to the first power adapter in the 287 Patent? A.
 4 Correct.”); *see also* Exh. F to Lowe’s Motion (Exhibit 13 to Yang Deposition (Dec.
 5 10, 2013)) (Dkt. No. 57-3).

6 62. Shao discloses “**a tail receptacle having a conducting strip set and a**
 7 **second power adaptor disposed interiorly**,” as recited in independent claim 1. In
 8 Shao, “the device may also include a rear plug 20 that is a common household socket,
 9 coupled in parallel to the front plug to enable multiple light strings to be connected to
 10 each other from end to end.” Shao at 2:57-60. The rear plug of Shao is a “tail
 11 receptacle,” within the scope and meaning of the ’287 patent. In addition, a rear plug
 12 that is a common household socket inherently requires a conducting strip set disposed
 13 interiorly. *See* Schubert Decl. at ¶ 71.

14 63. Referring again to FIG. 3, Shao discloses that “the present invention
 15 comprises a front plug 10, an AC/DC converter socket comprising four rectifying
 16 diodes 31, 32, 33, and 34, and at least one LED serial set 30.” Shao at 3:45-48.
 17 According to Shao, “[t]he rectifying diodes 31, 32, 33, and 34 can be divided into two
 18 groups, with each group including two rectifying diodes.” *Id.* at 3:1-3. “In one
 19 embodiment, the two rectifying diodes of the second group can be combined with the
 20 rear plug 20 to form a package 62 and 66.” *Id.* at 3:17-19. The second pair of
 21 rectifying diodes 33 and 34 form a power adaptor, within the scope and meaning of
 22 the ’287 patent. *See* Schubert Decl. at ¶ 72.

23 64. Chao Tai’s corporate representative, Mr. Chen Sheng Yang, confirmed
 24 that the arrangement of two rectifying diodes in the opposite plug in Shao was
 25 equivalent to the second power adapter in the ’287 patent. Exh. I to Lowe’s Reply
 26 (Yang Deposition Tr. (Dec. 10, 2013)) at 182:23-25 (Q. And Box B would be
 27 equivalent to the second power adapter in the 287 Patent? A. Correct.”) (Dkt. No. 70-
 28

6); *see also* Exh. F. to Lowe’s Motion (Exhibit 13 to Yang Deposition (Dec. 10, 2013)) (Dkt. No. 57-3).

65. Shao discloses “**said second power adaptor converting said AC voltage through said first plug blade set to a low DC voltage,**” as recited in independent claim 1. Referring to FIG. 3, the layout of the two rectifying diodes 33 and 34 in the rear receptacle 20 of Shao shows that the polarity at the rear receptacle is positive. This conclusion is further supported by the “positive” sign placed in FIGS. 3 and 4 near the connection of the LED serial set 30 and the two rectifying diodes 33 and 34. *See* Schubert Decl. at ¶ 77. However, as explained above, Shao also discloses that “the connection method can be different from what is shown in FIG. 3 and FIG. 4.” Shao at 3:20-21. According to Shao, “[t]he position of the rectifying diodes 31 and 32 of the first group can be changed to the position of those of the second group 33 and 34, and vice visa,” and “if this is the case, the direction of the positive and negative ends of LEDs in the LED serial set should also be changed correspondingly.” *Id.* at 3:22-26. In Shao’s alternate configuration, the polarity of the light string at the rear receptacle would be negative. *See* Schubert Decl. at ¶ 77. Thus, in Shao’s disclosed alternate configuration, the power adaptor at the rear receptacle would convert an input AC voltage to a low DC voltage, within the scope and meaning of the ’287 patent. *See id.*

66. Mr. Chen Sheng Yang, Chao Tai’s corporate representative, confirmed that Shao’s arrangement of two rectifying diodes in the opposite plug is equivalent to the second power adaptor in the ’287 patent, and that Shao’s second power adaptor is capable of converting AC current to DC current. *See* Exh. I to Lowe’s Reply (Yang Deposition Tr. (Dec. 10, 2013)) at 181:12-22; *see id.* at 182:23-25 (Q. And Box B, that would be equivalent to the second power adapter in the 287 Patent? A. Correct.”); *see also* Exh. F. to Lowe’s Motion (Exhibit 13 to Yang Deposition (Dec. 10, 2013)) (Dkt. No. 57-3).

1 67. Shao discloses “**at least an LED string having a first end and a second**
 2 **end,”** as recited in independent claim 1. For example, Shao discloses that “[t]he LED
 3 serial set can be connected between the negative end of the two rectifying diodes of
 4 the first group and the positive end of the rectifying diodes of the second group.”
 5 Shao at Abstract. Furthermore, it is inherent that an LED string has a first end and a
 6 second end. *See* Schubert Decl. at ¶ 81. Chao Tai concedes that Shao discloses an
 7 LED light string. *See* Pl. SDF (Dkt. No. 64-1) at ¶ 35.

8 68. As stated previously, Shao discloses “**said first end being connected to**
 9 **said first power adaptor to receive said high DC voltage and said second end**
 10 **being connected to said second power adaptor to receive said low DC voltage so**
 11 **that said LED string is turned on to emit light,”** as recited in independent claim 1.
 12 As stated above, Shao discloses an alternate configuration and, when this alternative
 13 configuration is used, “the direction of the positive and negative ends of LEDs in the
 14 LED serial set should also be changed correspondingly.” Shao at 3:24-26. Thus,
 15 Shao’s alternative configuration discloses the first end being connected to the first
 16 power adapter to receive a high DC voltage and the second end being connected to the
 17 second power adapter to receive a low DC voltage. *See* Schubert Decl. at ¶ 84. When
 18 this circuit is completed and power applied, the result would be that the LED string is
 19 turned on to emit light. *See id.* In order to emit light, the LED string inherently must
 20 be connected to a positive and negative voltage provided by the two power adaptors,
 21 *i.e.*, the two split parts of the bridge rectifier. *See id.*

22 69. Chao Tai confirmed that Shao discloses first and second power adaptors
 23 at opposite ends of an LED light string that are equivalent to the first and second
 24 power adaptors claimed in the ’287 patent, and that are capable of receiving AC
 25 current and converting it to DC current to power an LED light string. *See* Exh. I to
 26 Lowe’s Reply (Yang Deposition Tr. (Dec. 10, 2013)) at 181:5-182:25 (Dkt. No. 70-6);
 27 *see also* Pl. SDF (Dkt. No. 64-1) at ¶ 35.

70. Shao discloses each and every limitation of claim 2 of the '287 patent, either expressly or inherently. Specifically, Shao discloses “[t]he **high power light string device as claimed in claim 1, wherein said conducting-strip set is electrically plugged by a second plug blade set of a second plug.**” *See* Schubert Decl. at ¶ 88. Shao provides “a rear plug 20 that is a common household socket, coupled in parallel to the front plug to enable multiple light strings to be connected to each other from end to end.” Shao at 2:57-60. As explained above, it is inherent that a rear plug that is a common household socket requires a conducting strip set disposed interiorly. *See* Schubert Decl. at ¶ 88. Moreover, when Shao’s rear plug is plugged by a second plug blade set of another light string to allow multiple strings to be connected end-to-end, the conducting strip set inherently is electrically plugged by a second plug blade set of a second plug. *See id.*

71. Chao Tai failed to identify any limitation of claim 2 of the '287 patent that is not disclosed by Shao, other than to indicate that certain limitations of claim 1, from which claim 2 depends, are not disclosed by Shao. *See* Pl. SDF (Dkt. No. 64-1) at ¶ 50. Thus, Chao Tai has conceded that if independent claim 1 is anticipated by Shao, then dependent claim 2 is also anticipated by Shao.

72. Shao discloses each and every limitation of claim 3 of the '287 patent, either expressly or inherently. Specifically, Shao discloses “[t]he **high power light string device as claimed in claim 1, wherein said conducting-strip set is electrically connected to said second power adaptor.**” *See* Schubert Decl. at ¶ 91. Shao provides “a rear plug 20 that is a common household socket, coupled in parallel to the front plug to enable multiple light strings to be connected to each other from end to end.” Shao at 2:57-60. As explained above, it is inherent that a rear plug that is a common household socket requires a conducting strip set disposed interiorly. *See* Schubert Decl. at ¶ 91. Moreover, Shao’s conducting strip set inherently must be electrically connected to the second power adaptor to enable multiple light strings to be connected to each other from end-to-end. *See id.*

73. Chao Tai failed to identify any limitation of claim 3 of the '287 patent that is not disclosed by Shao, other than to indicate that certain limitations of claim 1, from which claim 3 depends, are not disclosed by Shao. *See* Pl. SDF (Dkt. No. 64-1) at ¶ 53. Thus, Chao Tai has conceded that if independent claim 1 is anticipated by Shao, then dependent claim 3 is also anticipated by Shao.

74. Shao discloses each and every limitation of claim 4 of the '287 patent, either expressly or inherently. Specifically, Shao discloses “[t]he **high power light string device as claimed in claim 1, wherein said conducting-strip set is electrically connected to said first plug blade set.**” *See* Schubert Decl. at ¶ 94. Shao provides “a rear plug 20 that is a common household socket, coupled in parallel to the front plug to enable multiple light strings to be connected to each other from end to end.” Shao at 2:57-60. As explained above, it is inherent that a rear plug that is a common household socket requires a conducting strip set disposed interiorly. *See also* Schubert Decl. at ¶ 94. Shao discloses that “three wires 301, 302 and 303 are needed for the AC/DC converter of this embodiment of the lighting chain.” Shao at 3:27-28. The wires 301, 302, and 303 are illustrated in FIG. 3 of Shao as being electrically connected between Shao’s plug blade set and Shao’s rear plug. *See* Schubert Decl. at ¶ 94. Moreover, Shao’s conducting strip set inherently must be electrically connected to said first plug set to enable multiple light strings to be connected to each other from end-to-end. *See id.*

75. Chao Tai failed to identify any limitation of claim 4 of the '287 patent that is not disclosed by Shao, other than to indicate that certain limitations of claim 1, from which claim 4 depends, are not disclosed by Shao. *See* Pl. SDF (Dkt. No. 64-1) at ¶ 56. Thus, Chao Tai has conceded that if independent claim 1 is anticipated by Shao, then dependent claim 4 is also anticipated by Shao.

76. Shao discloses each and every limitation of claim 5 of the '287 patent, either expressly or inherently. Specifically, Shao discloses “[t]he **high power light string device as claimed in claim 1, wherein said plug and said tail receptacle are**

1 **driven at the same voltage.”** *See* Schubert Decl. at ¶ 97. Shao provides that “[t]he
 2 front plug 10 can be a common household plug that is connected to a source voltage
 3 (110 VAC or 220 VAC).” Shao at 2:55-56. In addition, Shao discloses that the
 4 “device may also include a rear plug 20 that is common household socket, coupled in
 5 parallel to the front plug to enable multiple light strings to be connected to each other
 6 from end to end.” *Id.* at 2:56-60. FIG. 3 of Shao, shown above, also shows the front
 7 plug 10 and rear plug 20 driven at 110 VAC, *i.e.*, the same voltage. *See* Schubert
 8 Decl. at ¶ 97. Thus, Shao’s front plug and rear and Shao’s rear plug are in parallel
 9 with one another and, therefore, driven at the same voltage. *See id.* Moreover, when
 10 the plug and the tail receptacle are configured in a parallel circuit, such as that of
 11 Shao, they inherently are driven at the same voltage. *See id.*

12 77. Chao Tai failed to identify any limitation of claim 5 of the ’287 patent
 13 that is not disclosed by Shao, other than to indicate that certain limitations of claim 1,
 14 from which claim 5 depends, are not disclosed by Shao. *See* Pl. SDF (Dkt. No. 64-1)
 15 at ¶ 58. Thus, Chao Tai has conceded that if independent claim 1 is anticipated by
 16 Shao, then dependent claim 5 is also anticipated by Shao.

17 78. Shao discloses each and every limitation of claim 7 of the ’287 patent,
 18 either expressly or inherently. Specifically, Shao discloses “[t]he **high power light**
 19 **string device as claimed in claim 1, wherein said plug and said tail receptacle are**
 20 **made of plastic material.”** *See* Schubert Decl. at ¶ 100. Shao provides that “[t]he
 21 rear plug may alternatively be a dummy plug, a piece of plastic or other material
 22 acting as an end cap for the LED lighting chain.” Shao at 2:62-64. It is an inherent
 23 characteristic of LED light string circuits that lack a grounding connection, such as
 24 those disclosed in Shao, that they are manufactured with a non-conductive housing,
 25 such as plastic. *See* Schubert Decl. at ¶ 100. Moreover, it is old and well-known in
 26 the art of LED light strings that plug and tail receptacles are made of plastic. *See id.*

27 79. Chao Tai failed to identify any limitation of claim 7 of the ’287 patent
 28 that is not disclosed by Shao, other than to indicate that certain limitations of claim 1,

1 from which claim 7 depends, are not disclosed by Shao. *See* Pl. SDF (Dkt. No. 64-1)
 2 at ¶ 62. Thus, Chao Tai has conceded that if independent claim 1 is anticipated by
 3 Shao, then dependent claim 7 is also anticipated by Shao.

4 80. Shao discloses each and every limitation of claim 8 of the '287 patent,
 5 either expressly or inherently. Referring to dependent claim 8, Shao discloses "[t]he
 6 **high power light string device as claimed in claim 1, wherein each LED of said**
 7 **LED string is selected among a white LED, a red LED, a blue LED, a green LED,**
 8 **a yellow LED, and a LED of another color.**" *See* Schubert Decl. at ¶ 103. Shao
 9 explains that "LED decorative lighting, with its colorful lights, can be used for
 10 decorating effects in the yard and for lighting in the house." Shao at 1:15-17.
 11 Moreover, it is inherent that LED lights are comprised of at least one color, and that
 12 color necessarily includes white, red, blue, green, yellow, and/or another color. *See*
 13 Schubert Decl. at ¶ 103.

14 81. Chao Tai failed to identify any limitation of claim 8 of the '287 patent
 15 that is not disclosed by Shao, other than to indicate that certain limitations of claim 1,
 16 from which claim 8 depends, are not disclosed by Shao. *See* Pl. SDF (Dkt. No. 64-1)
 17 at ¶ 65. Thus, Chao Tai has conceded that if independent claim 1 is anticipated by
 18 Shao, then C dependent claim 8 is also anticipated by Shao.

19 82. Chao Tai fails to identify any material factual dispute in opposition to
 20 Lowe's clear showing that claims 1-5, 7 and 8 of the '287 patent are anticipated.

21 83. Accordingly, claims 1-5, 7, and 8 of the '287 patent are anticipated by the
 22 Shao patent. Claims 1-5, 7, and 8 of the '287 patent are, therefore, invalid.

23 **VII. CONCLUSION**

24 84. For the above reasons, Shao discloses each and every element of claims
 25 1-5, 7, and 8 of the '287 patent.

26 85. Thus, claims 1-5, 7, and 8 of the '287 patent are invalid as anticipated by
 27 Shao.

1 86. Therefore, Defendants Lowe's and LedUp are entitled to summary
2 judgment of invalidity as a matter of law.



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4 DATED: __March 4, 2014__

5
6 Hon. Manuel L. Real

7 UNITED STATES DISTRICT JUDGE
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